

Lines, Angles and Triangles

Algebra Applications with Angles

Find x .
(Note: Vertical angles are congruent.)

$2x = 80$ $x = 40$

$x + 4x = 90$ $x = 18$

$m\angle BAD = 90$

Find x .

1. $\angle F$ and $\angle G$ are supplementary.

$4x + 8x = 180$
 $12x = 180$
 $x = 15^\circ$

2. $\frac{2}{3}x = 90^\circ$
 $x = 135^\circ$

3. $2x + 3x + 15 = 90$
 $5x = 75$
 $x = 15^\circ$

4. $4x - 20 + x = 180$
 $5x = 200$
 $x = 40^\circ$

5. $2x + 28 = 3x - 14$
 $28 = x - 14$
 $42 = x$

6. $\angle A = \angle B$

$2x + 8 = \frac{5}{2}x$
 $8 = \frac{1}{2}x$
 $16 = x$

7. $\angle H$ and $\angle J$ are complementary

$x + 24 + x = 90$
 $2x = 66$
 $x = 33^\circ$

8. $5x = 91 - 2x$
 $7x = 91$ $x = 13^\circ$

9. $4x + 5x - 27 = 180^\circ$
 $9x = 207$
 $x = 23^\circ$

10. $\angle LKM$ is a right angle

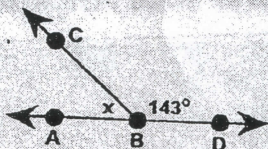
$2x + 20 + 4x - 2 = 90$
 $6x + 18 = 90$
 $6x = 72$
 $x = 12^\circ$

11. $12x + 25 + 3x - 10 = 180$
 $15x + 15 = 180$
 $15x = 165$
 $x = 11^\circ$

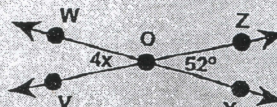
12. $14x + 7 + 20x + 15 = 90$
 $34x + 22 = 90$
 $34x = 68$
 $x = 2^\circ$

...More Practice with Special Angles

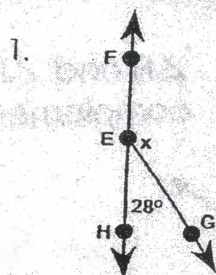
Find x and the measure of the angles.



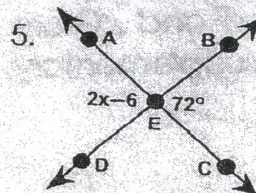
$$\begin{aligned} x + 143 &= 180^\circ \\ x &= 180 - 143 \\ x &= 37^\circ \\ m\angle ABC &= 37^\circ \end{aligned}$$



$$\begin{aligned} 4x &= 52 \\ x &= \frac{52}{4} \\ x &= 13 \\ m\angle WOV &= 4x = 4 \cdot 13 = 52^\circ \end{aligned}$$



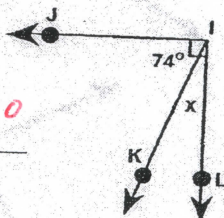
$$\begin{aligned} x &= 152^\circ \\ m\angle FEG &= 152^\circ \end{aligned}$$



$$\begin{aligned} x &= 39^\circ \\ m\angle AED &= 72^\circ \end{aligned}$$

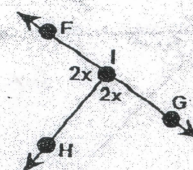
2.

$$\begin{aligned} x &= 16^\circ \\ m\angle KIL &= 16^\circ \end{aligned}$$



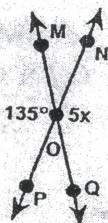
6.

$$\begin{aligned} x &= 45^\circ \\ m\angle FIH &= 90^\circ \\ m\angle HIG &= 90^\circ \end{aligned}$$



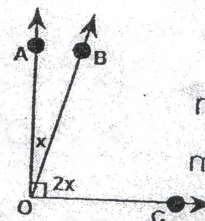
3.

$$\begin{aligned} x &= 27^\circ \\ m\angle NOQ &= 135^\circ \end{aligned}$$



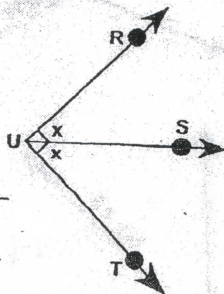
7.

$$\begin{aligned} x &= 30^\circ \\ m\angle AOB &= 30^\circ \\ m\angle BOC &= 60^\circ \end{aligned}$$



4.

$$\begin{aligned} x &= 45^\circ \\ m\angle RUS &= 45^\circ \\ m\angle TUS &= 45^\circ \end{aligned}$$



8.

$$\begin{aligned} m\angle YOZ &= 90^\circ \\ m\angle WOX &= 50^\circ \\ m\angle XOZ &= 130^\circ \end{aligned}$$

